a general way to those at Topeka, Iola, and Garnett, Kans., descriptions of which appear in this article. Over this area, extending more than 250 miles west and 75 miles south of Topeka, the halos were observed at practically the same hour.

The territory covered by the stations reporting either two or three brilliant sun dogs (or parhelia) in the late

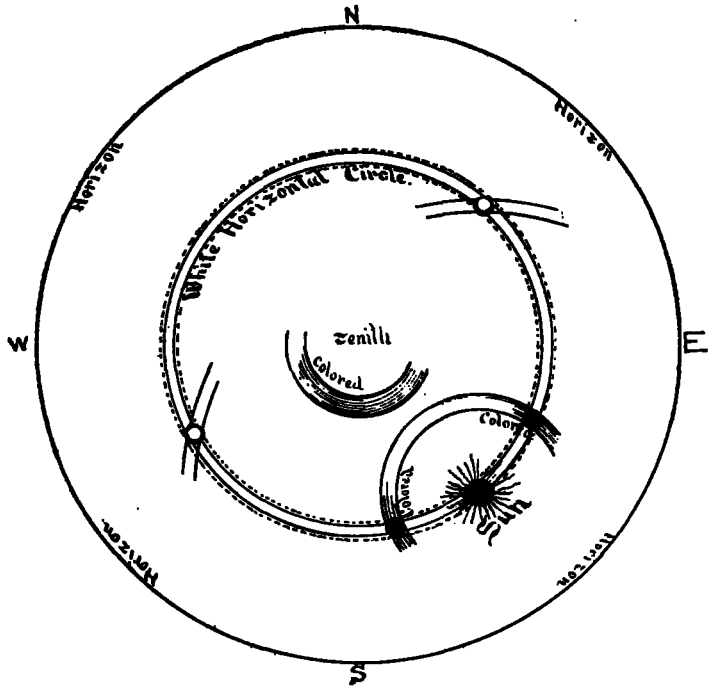

FIG. 2.—Solar halos seen at Iola, Kans., February 24, 1914, between 8:30 and 11:25 a. m. (90th meridian time).

afternoon was fully as extended and, as in the case of the halos, the sun dogs were observed at the same hour at all stations reporting them.

THE SOLAR HALOS AS SEEN AT TOPEKA.

By S. D. FLORA, Observer, Weather Bureau.

At Topeka the halos consisted of the segments of four bright halos and three sun dogs or parhelia in prismatic colors, and a white circle that extended entirely around the sky at the altitude of the sun. They were first noted at 9:30 a. m. and had mostly disappeared by 10 a. m. [90th mer. time]. (See fig. 1, p. 271.)

Two very bright sun dogs about 5° long appeared on each side of the sun at about 22° distance from it. The white circle extended horizontally through the sun dogs and the sun. It was sharply defined for about 100° on the outside of each sun dog, but could scarcely be distinguished between the sun dogs and the sun and in that part of the sky opposite the sun. The third sun dog appeared in this white circle about 46° to the northeast of the sun.

Two intersecting halos appeared 23° above the sun and two more 46° above it. The one nearest the sun was about 40° long and, if extended as a circle, would have passed around the sun just outside the sun dogs. The second prismatic halo was turned convexly to the sun and overlapped the first just above the sun. It was only 30° long, but was the brighter of the two, and this made the longer halo, the one turned with its concave side to the sun, have at first appearance the shape of the bow generally shown in the pictures of Cupid. The segment of the halo turned convexly to the sun seemed to indicate that this halo, if complete, would have been elliptical.

The two halos 46° above the sun were arranged and colored similarly to the ones at 23° distance, but each was only about half as long.

In each halo that the spectrum colors appeared the reddish tints were on the side nearest the sun. By 10:00 a. m. only the sun dogs were visible and these disappeared by 11:00 a. m.

The sky during this time was partly covered with a veil of cirro-stratus clouds so thin that they gave it a milky rather than a cloudy appearance except just a few places where the clouds were plainly apparent. Most of the halo formation appeared where the clouds were thin.

THE SOLAR HALOS AS SEEN AT IOLA.

By H. K. HOLCOMB, Observer, Weather Bureau.

A complete circle of white light, two incomplete solar halos, and four mock suns were observed from 9:15 a. m. to 11:25 a. m. [90th mer. time], February 24, 1914, at this station. (See fig. 2.)

Portions of the above phenomenon were observed as early as 8:30 a. m. and gradually disappeared between 10:30 and 11:25 a. m. The large, complete circle of white light, parallel to the horizon, at the altitude of the sun, was the most conspicuous part of the phenomenon. There

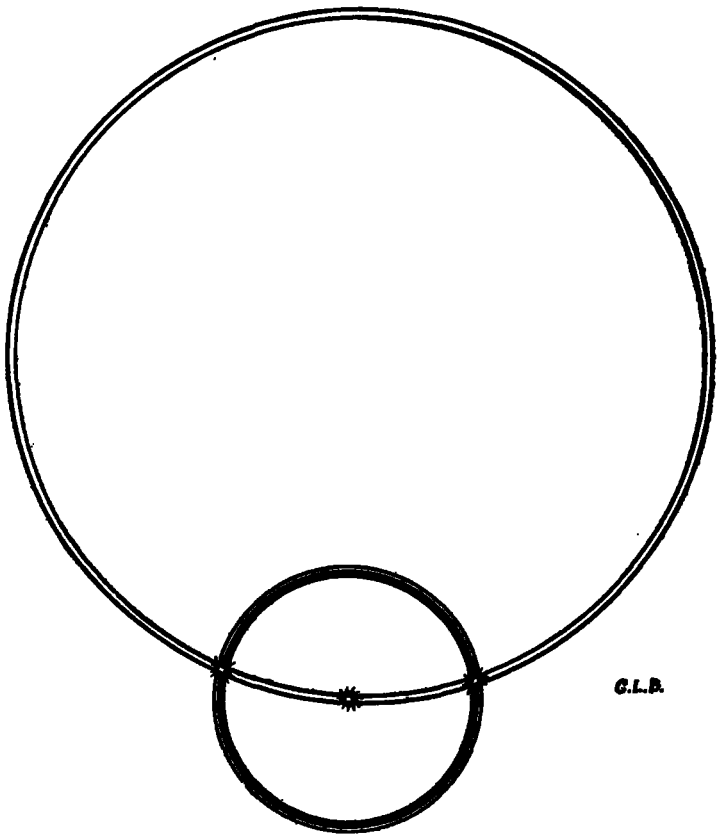

FIG. 3.—Solar halo seen at Garnett, Kans., February 24, 1914, at 9:30 a. m. (90th meridian time).

was an incomplete solar halo of 22° radius, and another very faint solar halo of 90° radius. Where these halos crossed the ring of white light mock suns were produced. The inner halo and the two mock suns were well defined and colored with red on the inner side, blending with orange, yellow, green, blue, and vanishing with purple on the outer side. Nearer the zenith another similarly col-